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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/026,627	12/27/2001	Makoto Kato	217774US0X	7741

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EXAMINER

RONESI, VICKEY M

ART UNIT PAPER NUMBER

1714

DATE MAILED: 01/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/026,627

Applicant(s)

KATO ET AL.

Examiner

Vickey Ronesi

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1-37 are pending in the application.
2. The objections and rejections set forth in the preceding office action mailed 7/2/2004 are withdrawn in light of applicants' amendment filed 10/28/2004. It is noted that the amendment raises various issues under 35 USC 112. Furthermore, since a search update yielded prior art not previously applied, a second non-final action is set forth as follows.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 18, 27, and 35 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

Support for the lower range of the amount of polar compound is insufficient because the calculation on which "1.86 % by weight" is based includes numbers whose significant figures do not support a number with 3 significant figures, i.e., the amount of TDP added to the RCM is

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recited as being "2 grams" (1 significant figure). Therefore, applicant only has support for a lower range that reads "2 % by weight."

4. Claims 7 and 28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 recites the limitation "the X-ray diffraction spectrum" in line 2 of the claim.

There is insufficient antecedent basis for this limitation in the claim.

Claim 28 recites the limitation "the X-ray diffraction spectrum" in line 2 of the claim.

There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior office action.

5. Claims 1-3, 6-11, 16, 17, and 19-34 rejected under 35 U.S.C. 102(e) as being anticipated by Patel (US 6,579,926).

Patel discloses a polyphenylene ether composition comprising a PPE such as poly(2,6-dimethyl-1,4-phenylene) ether (col. 3, lines 39-40) having an intrinsic viscosity of 0.33 (col. 5, line 14); additional polymeric material such as styrene resin (col.3, lines 54-60); up to 5 wt % (col. 5, Table 1) of an organoclay such as those disclosed on col. 4, lines 34-60 and a sodium montmorillonite (col. 5, line 24); 5-30 wt % of a fire retardant such as an organophosphate (col.

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4, lines 17-33); and an organic phosphite stabilizer (col. 4, line 65) such as tris-(2,4-di-*t*-butylphenyl) phosphite, i.e., a triphenyl phosphite (col. 5, line 27).

It is the examiner's position that it is inherent that the phosphate and phosphite compounds of Patel are chemically bonded to the layered clay since the resin composition of Patel, like the present composition (see page 26, lines 11-12 of the present specification), is prepared by mixing the resin composition in twin-screw extruder at a temperature of about 550°F, i.e., 288°C (col. 5, lines 32-42). Given the comparable processing conditions, it is only natural that the polar phosphate and phosphite compounds would chemically bond themselves to the layered clay as taught by the present specification. As a result, the composition would not exhibit a diffraction peak in an X-ray diffraction spectrum and would exhibit the presently claimed mechanical properties.

With respect to claim 21, the examiner notes that while it is recognized that the phrase "consisting essentially of" narrows the scope of the claims to the specified materials and those which do not materially affect the basic and novel characteristics of the claimed invention, absent a clear indication of what the basic and novel characteristics are, "consisting essentially of" is construed as equivalent to "comprising". The burden is on the applicant to show that the additional ingredients in the prior art, i.e. reinforcing glass fibers, would in fact be excluded from the claims and that such ingredients would materially change the characteristics of the applicant's invention. See MPEP 2111.03. Note page 3, lines 9-10 of the present specification where applicant discloses that the "basic and novel characteristics" of the invention lie in the improved uniform dispersion of the clay particles. Hence, it is the examiner's position that there is no evidence that the glass fibers of Patel would detract from the dispersion of clay in the

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composition and are therefore welcome in the presently claimed composition that recites “consisting essentially of.” Further evidence to support the examiner’s position is found in applicant’s own specification on page 17, lines 10-19 which states that the resin composite material may contain additional additives such as a reinforcing agent.

In light of the above, it is clear that Patel anticipates the presently cited claims.

6. Claims 1, 2, 6, 7, 9, 10, 16, 17, 19-25, 27, 28, 30, 31, 33, and 34 are rejected under 35 U.S.C. 102(e) as being anticipated by Adedeji et al (US 6,350,804).

Adedeji et al discloses a polyphenylene ether resin composition comprising a PPE such as 2,6-dimethyl-1,4-phenylene ether (col. 2, lines 53-54) having an intrinsic viscosity between 0.05-0.60 dL/g as measured in chloroform at 25°C (col. 3, lines 1-5); a non-elastomeric polymer such as a homopolymer of styrene (col. 3, line 32); 1-25 wt % (col. 2, lines 22-24) of an organoclay such as those disclosed on col. 1, line 60 to col. 2, line 16 and a sodium montmorillonite (col. 9, lines 58-62); and from about 2-6 wt % of a fire retardant such as an organic phosphate compound (Table 1 on col. 10).

It is the examiner’s position that it is inherent that the phosphate compound of Adedeji et al is chemically bonded to the layered clay since the resin composition of Adedeji et al, like the present composition (see page 26, lines 11-12 of the present specification), is prepared by mixing the resin composition in twin-screw extruder at a temperature of about 280-300°C (col. 10, lines 7-10). Given the comparable processing conditions, it is only natural that the polar phosphate compound would chemically bond itself to the layered clay as taught by the present

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specification. As a result, the composition would not exhibit a diffraction peak in an X-ray diffraction spectrum and would exhibit the presently claimed mechanical properties.

In light of the above, it is clear that Adedeji et al anticipates the presently cited claims.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior office action.

7. Claims 4, 5, 12-15, 36, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Patel (US 6,579,926).

The discussion with respect to Patel in paragraph 5 above is incorporated here by reference.

With respect to the order of mixing the ingredients in the composition, Patel only teaches that its ingredients are mixed together without any regard to order (col. 5, lines 32-42)).

Nevertheless, it is the examiner's position that it would have been obvious to one of ordinary skill in the art to add the ingredients one by one and thereby arrive at the presently cited claims. Case law holds that the selection of any order of mixing ingredients is *prima facie* obvious. *In re Gibson*, 39 F.2d 975, 5 USPQ 230 (CCPA 1930).

8. Claims 18 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Patel (US 6,579,926) in view of Katchman et al (US 3,761,541).

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The discussion with respect to Patel in paragraph 5 above is incorporated here by reference.

Although Patel discloses the use of an organic phosphite as a stabilizer in its polyphenylene ether composition, it only exemplifies compositions with 0.3 wt % based on the total composition of a triphenyl phosphite.

Katchman et al discloses a stabilized polyphenylene ether composition and teaches the use of organic phosphites such as those listed on col. 3, line 48 to col. 4, line 34 as a stabilizer in an amount ranging from 0.1 to 6.0 wt % (col. 4, lines 34-36; col. 10, lines 42-49).

Since Katchman et al teaches the use of organic phosphites in an amount ranging 0.1-6.0 wt % in a polyphenylene ether composition and given that Patel appears to be open to any appropriate amount of organic phosphite stabilizer, it would have been obvious to one of ordinary skill in the art to utilize the phosphite in Patel in appropriate amounts, including those within the scope of the present claims, and thereby arrive at the presently cited claims.

9. Claims 4, 5, 12, 14, 36, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adedeji et al (US 6,350,804).

The discussion with respect to Adedeji et al set forth in paragraph 6 above is incorporated here by reference.

With respect to the order of mixing the ingredients in the composition, Adedeji et al only teaches that its ingredients are mixed together without any regard to order (col. 9, lines 7-41).

Nevertheless, it is the examiner's position that it would have been obvious to one of ordinary skill in the art to add the ingredients one by one and thereby arrive at the presently cited

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claims. Case law holds that the selection of any order of mixing ingredients is *prima facie* obvious. *In re Gibson*, 39 F.2d 975, 5 USPQ 230 (CCPA 1930).

10. Claims 3, 8, 11, 18, 26, 29, 32, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adedeji et al (US 6,350,804) in view of Katchman et al (US 3,761,541).

The discussion with respect to Adedeji et al set forth in paragraph 6 above is incorporated here by reference.

Adedeji et al does not disclose the addition of a phosphite to its PPE composition but discloses that the composition may be further modified by including additives such as stabilizers (col. 9, line 5).

Katchman et al discloses a stabilized polyphenylene ether composition and teaches the use of organic phosphites as stabilizer such as those listed on col. 3, line 48 to col. 4, line 34 in an amount ranging from 0.1 to 6.0 wt % (col. 4, lines 34-36; col. 10, lines 42-49).

Since Katchman et al teaches the use of organic phosphites in an amount ranging 0.1-6.0 wt % in a polyphenylene ether composition and given that Adedeji et al is open to the addition of other additive such as stabilizers, it would have been obvious to one of ordinary skill in the art to utilize the organic phosphite stabilizer in the amount as taught b Katchman in the composition of Patel and thereby arrive at the presently cited claims.

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Correspondence

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vickey Ronesi whose telephone number is (571) 272-2701. The examiner can normally be reached on Monday - Friday, 8:30 a.m. - 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

January 3, 2005

vr

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